

Figure 1A

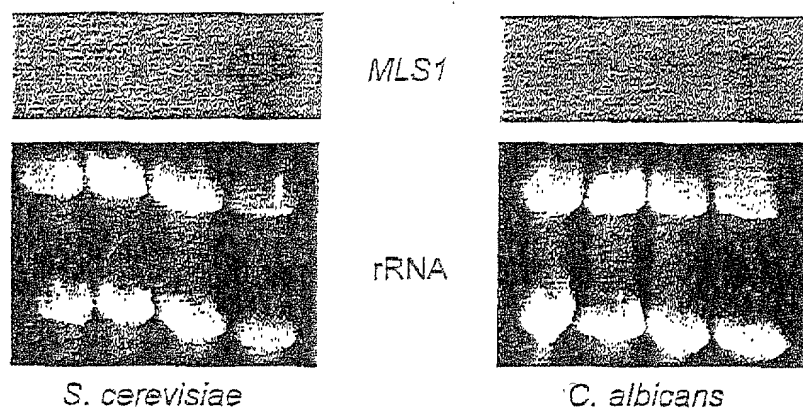


Figure 1B



YNB-Glucose

YNB-Acetate

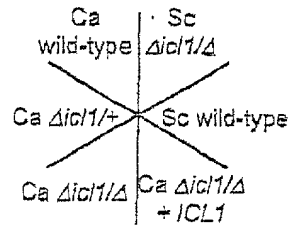


Figure 2A

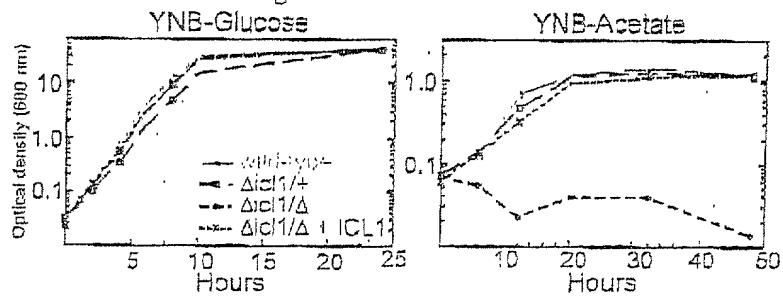


Figure 2B

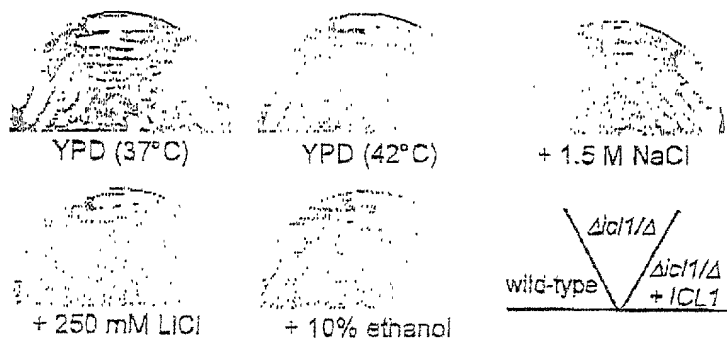


Figure 3A

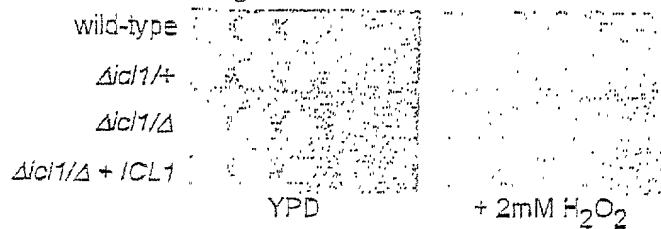


Figure 3B



Figure 3C

20220715-0001

Isocitrate lyase mutations attenuate
virulence in *C. albicans*

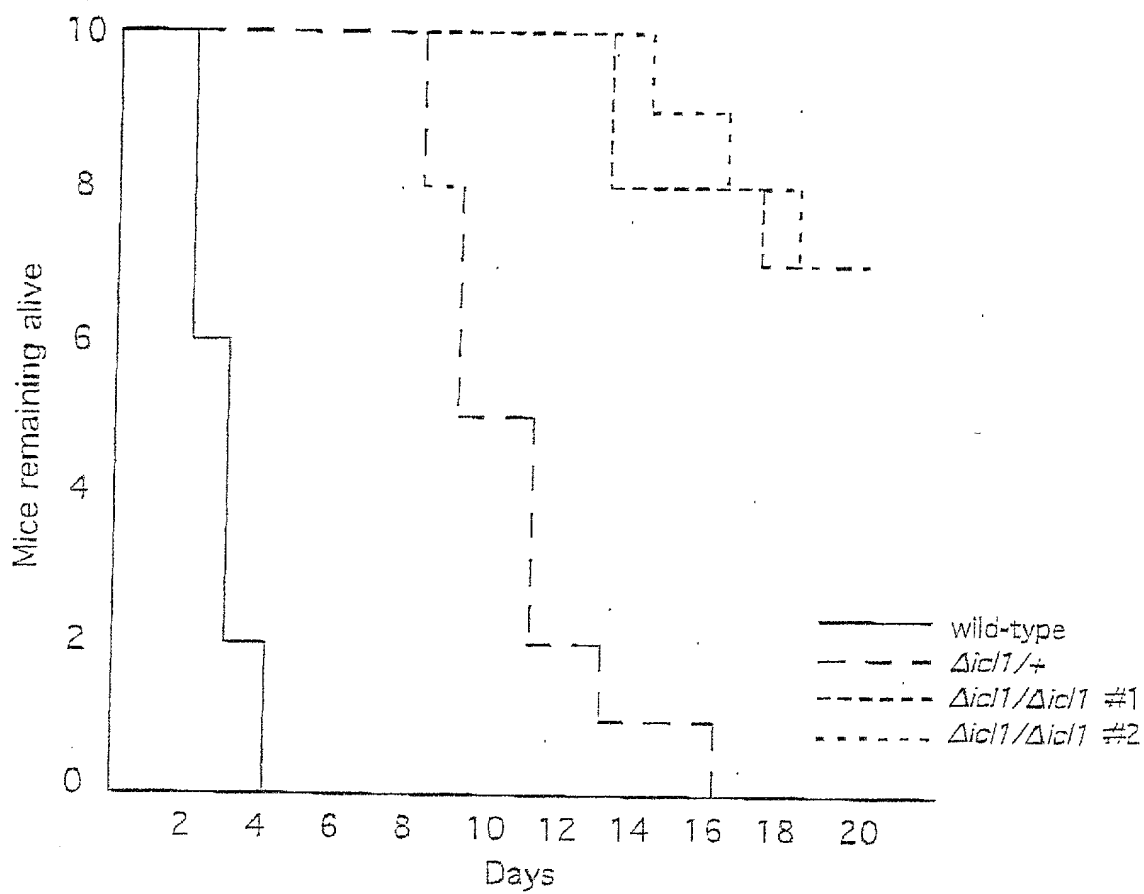


Figure 4

Sequence Alignment

Isocitrate lyase alignment

1	C. albicans IC11	M	P	Y	T	P	I	D	I	O	K	E	E	A	D	F	O	K	E	V	A	F	I	K	K	M	W	S	E	P	R	W	R	K	T	K	R	I	V	S	A	E	D	I	A	K	K	R	G	T	L	K	I	N	H	T	S	S	Q	Q	A	D	R	K	L	F	K	V	L	E	K	K	I	T	H	70
1	S. cerevisiae IC11	M	P	Y	T	P	I	D	I	O	K	E	E	A	D	F	O	K	E	V	A	F	I	K	K	M	W	S	E	P	R	W	R	K	T	K	R	I	V	S	A	E	D	I	A	K	K	R	G	T	L	K	I	N	H	T	S	S	Q	Q	A	D	R	K	L	F	K	V	L	E	K	K	I	T	H	75
1	C. tropicalis IC1	M	A	Y	T	K	I	D	I	N	Q	E	E	A	D	F	O	K	E	V	A	F	I	K	K	M	W	S	E	P	R	W	R	K	T	K	R	I	V	S	A	E	D	I	A	K	K	R	G	T	L	K	I	N	H	T	S	S	Q	Q	A	D	R	K	L	F	K	V	L	E	K	K	I	T	H	80
1	A. nidulans AceA	M	A	Y	T	K	I	D	I	N	Q	E	E	A	D	F	O	K	E	V	A	F	I	K	K	M	W	S	E	P	R	W	R	K	T	K	R	I	V	S	A	E	D	I	A	K	K	R	G	T	L	K	I	N	H	T	S	S	Q	Q	A	D	R	K	L	F	K	V	L	E	K	K	I	T	H	85
1	A. thaliana AceA	M	A	Y	T	K	I	D	I	N	Q	E	E	A	D	F	O	K	E	V	A	F	I	K	K	M	W	S	E	P	R	W	R	K	T	K	R	I	V	S	A	E	D	I	A	K	K	R	G	T	L	K	I	N	H	T	S	S	Q	Q	A	D	R	K	L	F	K	V	L	E	K	K	I	T	H	90
1	E. coli aceA	M	A	Y	T	K	I	D	I	N	Q	E	E	A	D	F	O	K	E	V	A	F	I	K	K	M	W	S	E	P	R	W	R	K	T	K	R	I	V	S	A	E	D	I	A	K	K	R	G	T	L	K	I	N	H	T	S	S	Q	Q	A	D	R	K	L	F	K	V	L	E	K	K	I	T	H	95
71	C. albicans IC11	D	A	D	K	I	T	V	S	I	F	T	E	G	A	L	D	I	P	I	H	V	A	Q	M	A	K	Y	L	D	S	I	Y	S	G	W	Q	C	S	S	T	A	S	I	S	N	E	P	S	P	D	L	A	D	P	M	D	T	V	P	N	K	V	E	L	W	F	A	Q	L	H	D	R	K	144	
70	S. cerevisiae IC11	D	A	D	K	I	T	V	S	I	F	T	E	G	A	L	D	I	P	I	H	V	A	Q	M	A	K	Y	L	D	S	I	Y	S	G	W	Q	C	S	S	T	A	S	I	S	N	E	P	S	P	D	L	A	D	P	M	D	T	V	P	N	K	V	E	L	W	F	A	Q	L	H	D	R	K	149	
70	C. tropicalis IC1	D	A	D	K	I	T	V	S	I	F	T	E	G	A	L	D	I	P	I	H	V	A	Q	M	A	K	Y	L	D	S	I	Y	S	G	W	Q	C	S	S	T	A	S	I	S	N	E	P	S	P	D	L	A	D	P	M	D	T	V	P	N	K	V	E	L	W	F	A	Q	L	H	D	R	K	154	
66	A. nidulans AceA	D	A	D	K	I	T	V	S	I	F	T	E	G	A	L	D	I	P	I	H	V	A	Q	M	A	K	Y	L	D	S	I	Y	S	G	W	Q	C	S	S	T	A	S	I	S	N	E	P	S	P	D	L	A	D	P	M	D	T	V	P	N	K	V	E	L	W	F	A	Q	L	H	D	R	K	159	
71	A. thaliana AceA	D	A	D	K	I	T	V	S	I	F	T	E	G	A	L	D	I	P	I	H	V	A	Q	M	A	K	Y	L	D	S	I	Y	S	G	W	Q	C	S	S	T	A	S	I	S	N	E	P	S	P	D	L	A	D	P	M	D	T	V	P	N	K	V	E	L	W	F	A	Q	L	H	D	R	K	164	
67	E. coli aceA	D	A	D	K	I	T	V	S	I	F	T	E	G	A	L	D	I	P	I	H	V	A	Q	M	A	K	Y	L	D	S	I	Y	S	G	W	Q	C	S	S	T	A	S	I	S	N	E	P	S	P	D	L	A	D	P	M	D	T	V	P	N	K	V	E	L	W	F	A	Q	L	H	D	R	K	174	
145	C. albicans IC11	Q	R	E	R	L	I	S	K	E	E	-	R	A	K	T	P	Y	I	D	F	I	L	P	I	A	D	A	D	I	C	H	G	G	I	T	A	I	I	E	L	T	C	M	F	I	E	R	G	A	A	G	H	I	E	D	Q	A	P	G	T	K	K	C	G	H	M	A	G	K	Y	217				
150	S. cerevisiae IC11	Q	R	E	R	L	I	S	K	E	E	-	R	A	K	T	P	Y	I	D	F	I	L	P	I	A	D	A	D	I	C	H	G	G	I	T	A	I	I	E	L	T	C	M	F	I	E	R	G	A	A	G	H	I	E	D	Q	A	P	G	T	K	K	C	G	H	M	A	G	K	Y	224				
145	C. tropicalis IC1	Q	R	E	R	L	I	S	K	E	E	-	R	A	K	T	P	Y	I	D	F	I	L	P	I	A	D	A	D	I	C	H	G	G	I	T	A	I	I	E	L	T	C	M	F	I	E	R	G	A	A	G	H	I	E	D	Q	A	P	G	T	K	K	C	G	H	M	A	G	K	Y	217				
145	A. nidulans AceA	Q	R	E	R	L	I	S	K	E	E	-	R	A	K	T	P	Y	I	D	F	I	L	P	I	A	D	A	D	I	C	H	G	G	I	T	A	I	I	E	L	T	C	M	F	I	E	R	G	A	A	G	H	I	E	D	Q	A	P	G	T	K	K	C	G	H	M	A	G	K	Y	212				
145	A. thaliana AceA	Q	R	E	R	L	I	S	K	E	E	-	R	A	K	T	P	Y	I	D	F	I	L	P	I	A	D	A	D	I	C	H	G	G	I	T	A	I	I	E	L	T	C	M	F	I	E	R	G	A	A	G	H	I	E	D	Q	A	P	G	T	K	K	C	G	H	M	A	G	K	Y	217				
135	E. coli aceA	Q	R	E	R	L	I	S	K	E	E	-	R	A	K	T	P	Y	I	D	F	I	L	P	I	A	D	A	D	I	C	H	G	G	I	T	A	I	I	E	L	T	C	M	F	I	E	R	G	A	A	G	H	I	E	D	Q	A	P	G	T	K	K	C	G	H	M	A	G	K	Y	202				
218	C. albicans IC11	L	V	P	Y	Q	E	H	N	R	L	V	A	R	A	S	A	D	I	F	G	S	N	L	A	C	A	R	T	D	S	E	A	A	T	L	S	L	D	H	R	D	H	V	E	I	L	G	A	T	N	P	E	A	-	G	D	A	A	D	M	A	E	A	E	S	K	G	280							
225	S. cerevisiae IC11	L	V	P	Y	Q	E	H	N	R	L	V	A	R	A	S	A	D	I	F	G	S	N	L	A	C	A	R	T	D	S	E	A	A	T	L	S	L	D	H	R	D	H	V	E	I	L	G	A	T	N	P	E	A	-	G	D	A	A	D	M	A	E	A	E	S	K	G	297							
218	C. tropicalis IC1	L	V	P	Y	Q	E	H	N	R	L	V	A	R	A	S	A	D	I	F	G	S	N	L	A	C	A	R	T	D	S	E	A	A	T	L	S	L	D	H	R	D	H	V	E	I	L	G	A	T	N	P	E	A	-	G	D	A	A	D	M	A	E	A	E	S	K	G	290							
213	A. nidulans AceA	L	V	P	Y	Q	E	H	N	R	L	V	A	R	A	S	A	D	I	F	G	S	N	L	A	C	A	R	T	D	S	E	A	A	T	L	S	L	D	H	R	D	H	V	E	I	L	G	A	T	N	P	E	A	-	G	D	A	A	D	M	A	E	A	E	S	K	G	303							
218	A. thaliana AceA	L	V	P	Y	Q	E	H	N	R	L	V	A	R	A	S	A	D	I	F	G	S	N	L	A	C	A	R	T	D	S	E	A	A	T	L	S	L	D	H	R	D	H	V	E	I	L	G	A	T	N	P	E	A	-	G	D	A	A	D	M	A	E	A	E	S	K	G	305							
203	E. coli aceA	L	V	P	Y	Q	E	H	N	R	L	V	A	R	A	S	A	D	I	F	G	S	N	L	A	C	A	R	T	D	S	E	A	A	T	L	S	L	D	H	R	D	H	V	E	I	L	G	A	T	N	P	E	A	-	G	D	A	A	D	M	A	E	A	E	S	K	G	307							
291	C. albicans IC11	I	S	G	N	E	L	A	I	E	S	E	W	T	K	A	C	L	K	L	H	E	A	V	I	D	E	I	K	N	G	N	Y	S	N	-	K	D	A	L	T	K	F	T	D	K	V	N	P	L	S	H	T	S	H	K	E	A	K	L	A	K	E	L	T	G	K	D	L	Y	363					
295	S. cerevisiae IC11	I	S	G	N	E	L	A	I	E	S	E	W	T	K	A	C	L	K	L	H	E	A	V	I	D	E	I	K	N	G	N	Y	S	N	-	K	D	A	L	T	K	F	T	D	K	V	N	P	L	S	H	T	S	H	K	E	A	K	L	A	K	E	L	T	G	K	D	L	Y	370					
291	C. tropicalis IC1	I	S	G	N	E	L	A	I	E	S	E	W	T	K	A	C	L	K	L	H	E	A	V	I	D	E	I	K	N	G	N	Y	S	N	-	K	D	A	L	T	K	F	T	D	K	V	N	P	L	S	H	T	S	H	K	E	A	K	L	A	K	E	L	T	G	K	D	L	Y	363					
286	A. nidulans AceA	K	N	G	A	E	L	Q	A	S	I	E	D	E	L	K	A	C	L	K	L	H	E	A	V	I	D	E	I	K	N	G	N	Y	S	N	-	K	D	A	L	T	K	F	T	D	K	V	N	P	L	S	H	T	S	H	K	E	A	K	L	A	K	E	L	T	G	K	D	L	Y	365				
283	A. thaliana AceA	K	N	G	A	E	L	Q	A	S	I	E	D	E	L	K	A	C	L	K	L	H	E	A	V	I	D	E	I	K	N	G	N	Y	S	N	-	K	D	A	L	T	K	F	T	D	K	V	N	P	L	S	H	T	S	H	K	E	A	K	L	A	K	E	L	T	G	K	D	L	Y	367				
258	E. coli aceA	K	N	G	A	E	L	Q	A	S	I	E	D	E	L	K	A	C	L	K	L	H	E	A	V	I	D	E	I	K	N	G	N	Y	S	N	-	K	D	A	L	T	K	F	T	D	K	V	N	P	L	S	H	T	S	H	K	E	A	K	L	A	K	E	L	T	G	K	D	L	Y	370				
364	C. albicans IC11	F	N	D	V	A	R	E	G	Y	R	Y	Q	G	G	T	Q	C	A	V	M	R	G	R	A	Z	A	P	V	A	D	L	I	A	W	M	F	S	A	I	P	D	Y	A	O	A	K	E	F	A	D	G	V	K	E	A	V	P	D	I	O	W	L	A	Y	N	L	S	P	S	F	N	W	Q	438	
371	S. cerevisiae IC11	F	N	D	V	A	R	E	G</																																																																			

The regulation of *ICL1* is similar in both *S. cerevisiae* and *C. albicans*

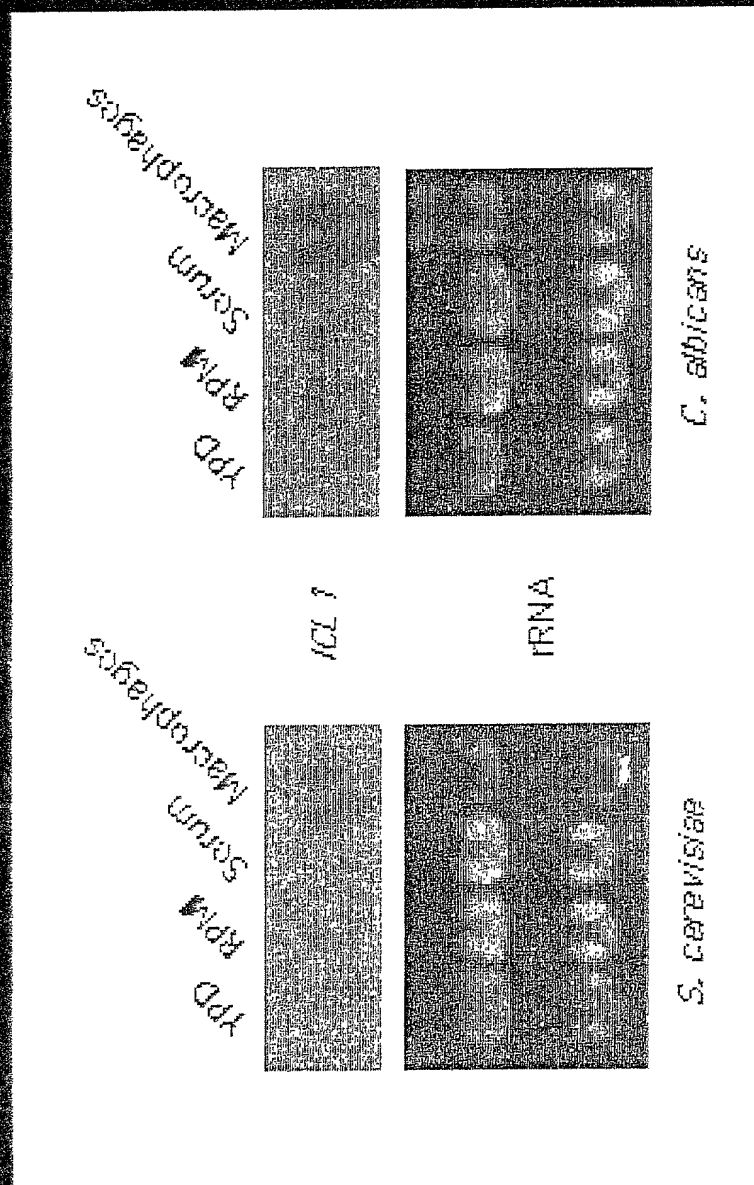


Figure 6

Glyoxylate mutants cannot grow on acetate or ethanol

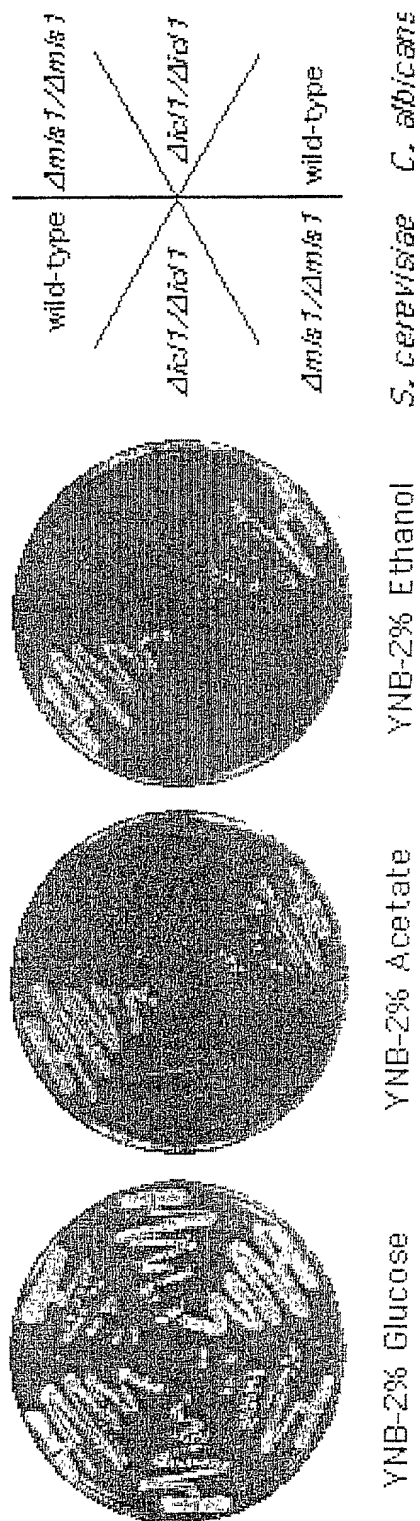


Figure 7

C. albicans glyoxylate mutants: Growth rates

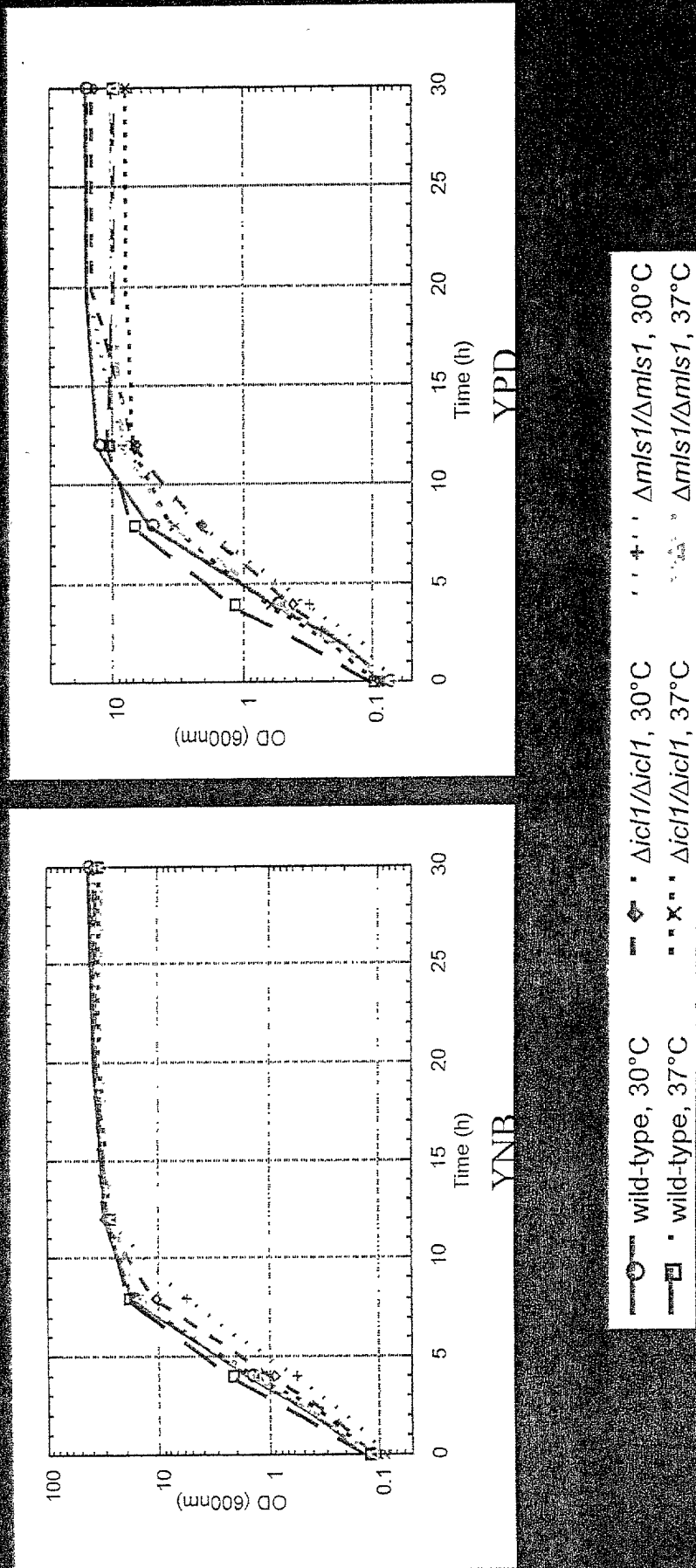


Figure 8

Itaconic Acid inhibits growth on acetate

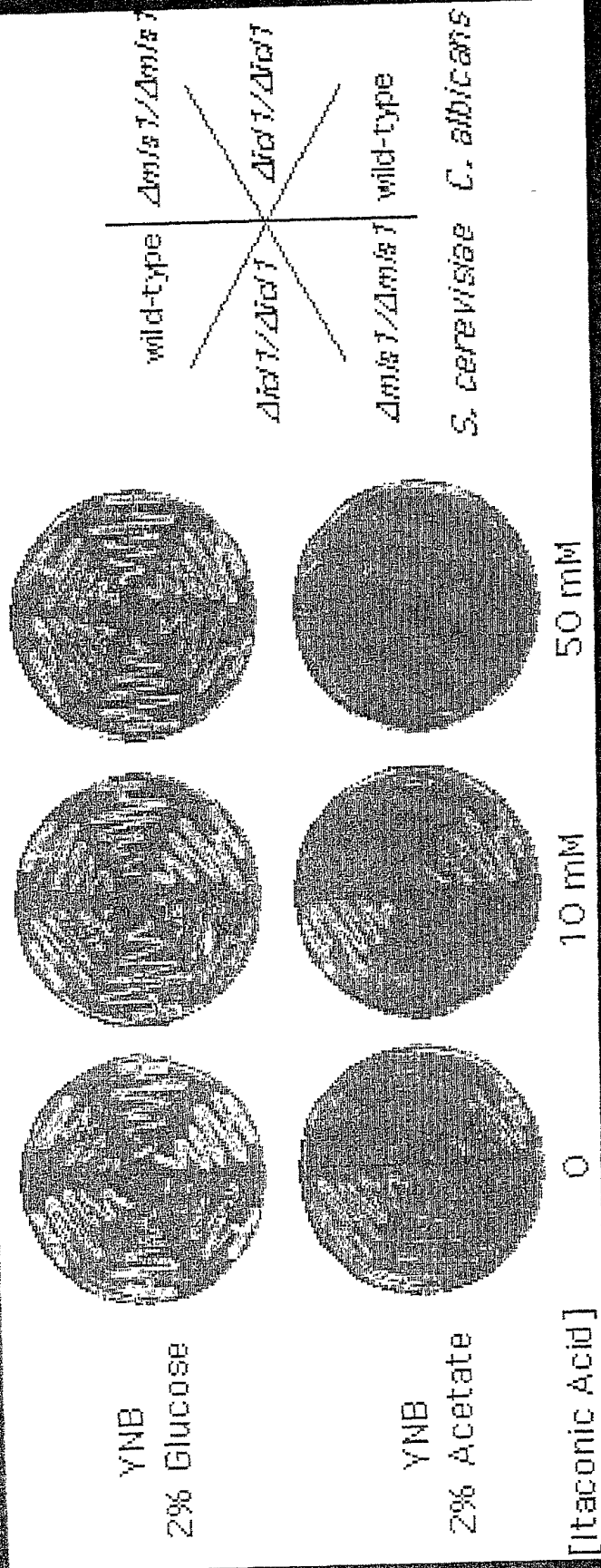


Figure 9